Technical Services facts

Clean Rooms and Large Test Article Assembly Areas

The White Sands Test Facility (WSTF) maintains several clean rooms and large areas that can be used for test article assembly and checkout. These areas range from Class 100 clean rooms and flow benches to large size assembly areas.

Equipment/Capabilities

Class 100

- A 20 by 24 by 8 ft^3 International Space Station (ISS) clean room with a 6 by 12 ft^2 anteroom is used for depot processing of ISS hardware. It is electrostatic discharge (ESD) rated, has the ability to vacuum down to 10(-3) torr level, is equipped with 3000-psi nitrogen and helium, and has a workstation with a fume extraction system.
- All of the precision cleaned hardware at WSTF is processed in a 26 by 24 by 8 ft^3 white room clean room.
- All components are reassembled and function tested in a 14 by 21 by 8 ft^3 modular clean room.
- WSTF utilizes several Class 100 flow benches, each equipped with varying levels of facility supply including nitrogen, helium, oxygen, and compressed air.

Class 10,000

- Depot processing of the shuttle reaction control system (RCS) thruster fuel and oxidizer pilot operated valve (POV) and the direct acting valves are processed in the POV room.
- Depot processing of the shuttle Orbital Maneuvering System (OMS) engine work is performed in a 20 by 20 by 15 ft^3 OMS Engine Assembly Room. This room is equipped with facility 3000-psi nitrogen and helium with the ability to pump up to 9000 psi.
- The International Space Station (ISS) Respiratory Support Pack (RSP) and the Parker Alternating Current (AC) Motor Valve, Manual Valve, and Pressure Relief Valve can all be refurbished using the 19 by 31 by 8 ft^3 Parker Component Clean Room. The room has facility 3000-psi nitrogen and helium, deionized water, HFE 7100 flow bench, and an ultrasonic flush bench.
- The Component Test Facility has several different soft-walled Class 10,000 work areas that are used for RCS thruster processing.
- All clean room garments are processed in a soft-walled Class 10,000 work area.
- A portable 15 by 15 ft^2 soft-walled structure can be used to provide a local class 10,000 work environment wherever it is needed.
- Building 416 is an environmentally controlled 60 by 40 by 22 ft^3 high building with a moveable 16 by 16 by 10 ft^3 Class 100,000 (currently maintained as Class 100,000 because there is no project requirement for the more stringent cleanliness requirements, but it passed Class 10,000 when it was first built) soft-walled clean room. The building is equipped with 6000-psi helium, 750-psi nitrogen, fire suppression, and emergency eyewash and shower stations.

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- OMS Tank Processing Area (design FY03, construction FY04) will be a 20 by 24 by 12 ft^3 (min. height) Class 10,000 clean room that will have facility 3000-psi nitrogen and 2200-psi breathing air supply. The room will be explosion proof (Class I Div. II Group B). There will be an adjoining 24 by 10 by 10 ft^3 Class 10,000 clean room with double door access between the two rooms. Visually Clean and/or Large Test Article Assembly Areas.
- Building 416 is a 60 by 40 by 22 ft^3 building divided into a 20 by 40 ft^2 shop and equipment area and a 40 by 40 ft^2 assembly room. A moveable 16 by 16 by 10 ft^3 soft-walled Class 100,000 clean room is located within the assembly room. The building is equipped with 6000-psi helium, 750-psi nitrogen, fire suppression, and emergency eyewash and shower stations. The assembly room is explosion proof and the floor is dropped approximately 3 in. for spill containment. The assembly room also has a 4000-lb Bridge Crane. Temperature can be controlled between 65 and 100 ºF. Relative humidity is controlled between 30 and 50 percent.
- The South High Bay (SHB) is a 120 by 50 ft^2 building standing 48 ft high. It contains 50 by 23 ft^2 access doors on each end and a 15-ton bridge crane that runs along the length of the building.
- A fully enclosed cleaning high bay, with a 15-ton bridge crane is attached to the Component Services Section for working with large articles such as pressure vessels, tankers, and chambers; effluent retention and disposal is available.

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